

Claims

What is claimed is:

1. A system comprising:
  - 5 a) a wireline network interface;
  - b) a local wireless interface providing a communication zone in which communications with a mobile terminal are possible, the mobile terminal associated with a primary directory number and adapted to communicate with the local wireless interface to facilitate a call through a wireline network and communicate with a wireless network to facilitate a call through the wireless network; and
  - 10 c) a control system cooperating with the wireline network interface and the local wireless interface and adapted to:
    - 15 i) establish through the wireline network a first call involving the mobile terminal by communicating with the wireline network via the wireline network interface and communicating with the mobile terminal via the local wireless interface;
    - 20 ii) during the first call, detect the mobile terminal moving out of the communication zone; and
    - 25 iii) initiate a transition of the first call being connected to the mobile terminal through the wireline network via the local wireless interface to the first call being connected to the mobile terminal through the wireless network using a temporary directory number.
2. The system of claim 1 wherein the mobile terminal is registered with the wireless network while the first call is established.
- 30 3. The system of claim 1 wherein the control system is further adapted to request the temporary directory number from the wireline network.
4. The system of claim 1 wherein the transition is initiated by sending a message configured to initiate establishing a wireless network

connection to the mobile terminal through the wireless network using the temporary directory number associated with the mobile terminal; connecting the first call to the wireless network connection, and dropping a wireline network connection with the mobile terminal.

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5. The system of claim 1 wherein the wireline network interface is a traditional telephony line interface.

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6. The system of claim 1 wherein the wireline network interface is a voice over packet interface.

7. The system of claim 1 wherein the wireless network is one of the group consisting of TDM, CDMA, and OFDM.

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8. The system of claim 1 wherein the transition is initiated by sending a message intended for a wireline switch and configured to cause the wireline switch to transfer the first call to the mobile terminal through the wireless network using the temporary directory number.

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9. The system of claim 1 wherein the transition is initiated by sending a message intended for a wireline switch and configured to cause the wireline switch to establish a three-way call based on the first call to the mobile terminal through the wireless network using the temporary directory number.

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10. The system of claim 9 wherein the control system is further adapted to send a second message intended for the wireline switch and configured to instruct the wireline switch to drop a wireline network connection.

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11. The system of claim 1 wherein the mobile terminal is also associated with a wireline network directory number, such that incoming calls for the mobile terminal directed to the wireline network directory number are established via the wireline network and incoming calls for the

mobile terminal directed to the temporary directory number are established via the wireless network.

- 5      12.    The system of claim 1 wherein the control system includes a signal processing function adapted to provide any necessary conversion of signals between the wireline network interface and the local wireless interface.
- 10     13.    The system of claim 1 wherein the control system is adapted to detect the mobile terminal moving out of the communication zone by detecting a bit error rate associated with communications with the mobile terminal via the local wireless interface surpassing a defined threshold.
- 15     14.    The system of claim 1 wherein the control system is adapted to detect the mobile terminal moving out of the communication zone by detecting a degradation in quality associated with communications with the mobile terminal via the local wireless interface surpassing a defined threshold.
- 20     15.    The system of claim 1 wherein the control system is adapted to detect the mobile terminal moving out of the communication zone by detecting an inability to communicate with the mobile terminal via the local wireless interface.
- 25     16.    The system of claim 1 wherein the control system is adapted to detect the mobile terminal moving out of the communication zone by detecting a decrease in signal strength associated with communications with the mobile terminal via the local wireless interface surpassing a defined threshold.
- 30     17.    The system of claim 1 wherein the local wireless interface is adapted to support communications with the mobile terminal using cordless telephone technology.

18. The system of claim 1 wherein the local wireless interface is adapted to support communications with the mobile terminal using wireless local area network telephone technology.
- 5 19. The system of claim 18 wherein the wireless local area network technology is based on 802.11 standards.
20. The system of claim 1 wherein the local wireless interface is adapted to support communications with the mobile terminal using Bluetooth  
10 technology.
21. The system of claim 1 wherein the control system is further adapted to detect a signal from the mobile terminal and initiate the transition of the first call being connected to the mobile terminal through the wireline  
15 network via the local wireless interface to the first call being connected to the mobile terminal through the wireless network, the signal from the mobile terminal responsive to a user of the mobile terminal requesting the transition.
- 20 22. A method of handling calls involving a mobile terminal adapted to communicate with a local wireless interface to facilitate a call through a wireline network and communicate with a wireless network to facilitate a call through the wireless network, the method comprising:
- 25 a) establishing through the wireline network a first call involving the mobile terminal by communicating with the wireline network via a wireline network interface and communicating with the mobile terminal via the local wireless interface;
- b) during the first call, detecting the mobile terminal moving out of a communication zone associated with the local wireless interface;  
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- c) initiating a transition of the first call being connected to the mobile terminal through the wireline network via the local wireless interface to the first call being connected to the mobile terminal through the wireless network using a temporary directory number.

23. The method of claim 22 wherein the mobile terminal is registered with the wireless network while the first call is established.
- 5 24. The method of claim 22 wherein the control system is further adapted to request the temporary directory number from the wireline network.
- 10 25. The method of claim 22 wherein initiating the transition comprises sending a message configured to initiate establishing a wireless network connection to the mobile terminal through the wireless network using the temporary directory number associated with the mobile terminal; connecting the first call to the wireless network connection, and dropping a wireline network connection with the mobile terminal.
- 15 26. The method of claim 22 wherein initiating the transition comprises sending a message intended for a wireline switch and configured to cause the wireline switch to transfer the first call to the mobile terminal through the wireless network using the temporary directory number.
- 20 27. The method of claim 22 wherein initiating the transition comprises sending a message intended for a wireline switch and configured to cause the wireline switch to establish a three-way call based on the first call to the mobile terminal through the wireless network using the temporary directory number.
- 25 28. The method of claim 27 further comprising sending a second message intended for the wireline switch and configured to instruct the wireline switch to drop a wireline network connection.
- 30 29. The method of claim 22 wherein the mobile terminal is also associated with a primary network directory number, such that incoming calls for the mobile terminal directed to the primary directory number are established via the wireline network and incoming calls for the mobile

terminal directed to the temporary directory number are established via the wireless network.

- 5           30.   The method of claim 22 further comprising providing any necessary conversion of signals between the wireline network interface and the local wireless interface.
- 10           31.   The method of claim 22 further comprising detecting the mobile terminal moving out of the communication zone by detecting a bit error rate associated with communications with the mobile terminal via the local wireless interface surpassing a defined threshold.
- 15           32.   The method of claim 22 further comprising detecting the mobile terminal moving out of the communication zone by detecting a degradation in quality associated with communications with the mobile terminal via the local wireless interface surpassing a defined threshold.
- 20           33.   The method of claim 22 further comprising detecting the mobile terminal moving out of the communication zone by detecting an inability to communicate with the mobile terminal via the local wireless interface.
- 25           34.   The method of claim 22 further comprising detecting the mobile terminal moving out of the communication zone by detecting a decrease in signal strength associated with communications with the mobile terminal via the local wireless interface surpassing a defined threshold.
- 30           35.   The method of claim 22 wherein the local wireless interface supports communications with the mobile terminal using cordless telephone technology.

36. The method of claim 22 wherein the local wireless interface supports communications with the mobile terminal using wireless local area network technology.
- 5 37. The method of claim 36 wherein the wireless local area network technology is based on 802.11 standards.
38. The method of claim 22 wherein the local wireless interface supports communications with the mobile terminal using Bluetooth technology.
- 10 39. The method of claim 22 further comprising inserting a signal into a voice path for the first call prior to initiating the transition to warn parties to the first call of a transfer.
- 15 40. The method of claim 22 further comprising detecting a signal from the mobile terminal and initiating the transition of the first call being connected to the mobile terminal through the wireline network via the local wireless interface to the first call being connected to the mobile terminal through the wireless network, the signal from the mobile
- 20 terminal responsive to a user of the mobile terminal requesting the transition.